

CLAIMS

- 1 1. A method of monitoring the carbon dioxide of a patient's breath while the patient is under
2 general anesthesia, comprising:
3 intubating the patient's throat with an airway having an air conduit extending therethrough
4 and extending from the mouth of the patient to the larynx of the patient,
5 maintaining an air passage between the airway and the facing surfaces of the patient's throat
6 to permit the patient to breathe about the airway,
7 withdrawing breath from about the larynx of the patient through the air conduit of the
8 airway and to a carbon dioxide monitor, and
9 monitoring the carbon dioxide content of the patient's breath withdrawn from about the
10 larynx with the carbon dioxide monitor.
- 1 2. The method of claim 1, and further including the step of injecting a gas through the air
2 conduit extending through the airway to the larynx ,
3 and wherein the step of withdrawing breath from about the larynx of the patient comprises
4 intermittently withdrawing breath,
5 and wherein the step of injecting gas to the larynx comprises intermittently injecting gas,
6 and wherein the steps of withdrawing breath and injecting gas are performed alternately.

1 3. The method of claim 2, wherein the step of injecting gas through the air conduit comprises
2 moving the gas through a first nipple that is co-extensive with the air conduit,
3 and the step of withdrawing breath from about the larynx comprises moving the breath
4 through a second nipple that intersects the air conduit.

1 4. The method of claim 1, wherein the step of withdrawing breath from the patient comprises
2 attaching one end of a flexible open ended tube to the airway in communication with the air conduit
3 and extending the other end of the open ended tube to a carbon dioxide monitor.

1 5. The method of claim 1, wherein the step withdrawing breath from the larynx
2 comprises moving the breath from the larynx to a plenum chamber in the airway and then moving
3 the breath from the plenum chamber to the monitoring device.

1 6. Apparatus for monitoring the carbon dioxide of a patient's breath when under anesthesia,
2 comprising:
3 an oro-pharyngeal airway for insertion into a person's throat comprising:
4 an elongate body having a proximal end and a distal end,
5 said proximal end of said body sized and shaped for engagement by a person's mouth and
6 having a radially extending member configured to block the movement of said proximal end into
7 the patient's mouth,
8 said body being of a predetermined length so that when said proximal end is at the
9 patient's mouth said distal end is positioned at the person's larynx,

10 said elongate body defining an open ended passage extending through the length of said
11 body and being open at the proximal and distal ends of said body,
12 a nipple extending beyond said radially extending flange, said nipple having an
13 opening that is co-extensive with said open ended passage,
14 a radially extending conduit having a passage therethrough in communication with
15 said open ended passage of said elongate body and said opening of said nipple, for the
16 passage therethrough of breath exhaled from the area of the patient's larynx,
17 protrusions extending from the elongated body shaped to engage the facing surfaces
18 of the throat of the patient and form a breathing passageway extending along and externally
19 of said conduit means,
20 a carbon dioxide monitor in communication with the passage of said radially
21 extending conduit for detecting the carbon dioxide received through the conduit of said body
22 from the distal end of the body at the larynx of the patient.

1 7. The apparatus of claim 6, wherein said airway is constructed of a thermoplastic polymer
2 and said airway is characterized by having been formed in a gas assisted injection mold.

1 8. The apparatus of claim 7, wherein a color is applied to said airway that is in contrasting color
2 with respect to said body to denote a preselected identifying external size of said body.

1 9. The apparatus of claim 7, wherein a color is applied to said airway that corresponds to the
2 external size of said body.

1 10. The apparatus of claim 7, wherein said passage of said radially extending conduit and
2 said open ended passage of said elongated body form a plenum of larger breadth than either of
3 said passage of said radially extending conduit and said open ended passage of said elongated
4 body.

1 11. The apparatus of claim 9, wherein said plenum is positioned at said radially extending
2 conduit for placement outside the patient's mouth.

1 12. Apparatus for monitoring carbon oxide of a patient's breath, comprising:
2 an oro-pharyngeal airway for insertion in the throat of a patient,
3 said airway having a proximal end for placement at the patient's mouth and a distal end
4 for placement through the patient's throat adjacent the larynx of the patient,
5 said airway defining an open ended, approximately cylindrical passage therethrough,
6 ribs extending externally along the length of the airway for engagement with the facing
7 surface of the throat of the patient for forming an external passage about the airway so that the
8 patient can breath about the airway,
9 a nipple at said proximal end of said airway extending co-extensively from said passage
10 for connection with a suction device or an insufflation device,
11 a protrusion at said proximal end of said conduit between said nipple and said conduit for
12 engagement by the lips of the patient to prevent the proximal end of the airway from entering the
13 mouth of the patient,

14 a T-connection formed between said protrusion and said nipple and an orifice extending
15 through said T-connection to said passage of said airway for controlling the movement of breath
16 exhaled from the patient through said passage, and

17 a carbon dioxide monitor in communication with said T-connection for detecting the
18 carbon dioxide in the patient's breath received from about the larynx without having passed
19 through the mouth of the patient.

1 13. The apparatus of claim 11, wherein said airway is characterized by having been formed of
2 polymer material by simultaneously feeding polymer material and nitrogen gas into the cavity of
3 a mold so that the nitrogen gas pushes the polymer material against the cavity walls of the mold
4 so that the polymer material forms the airway.

1 14. The apparatus of claim 11, wherein said orifice at said T-connection is of greater cross
2 sectional area than said central passage of said airway and forms a plenum for accumulating the
3 exhaled breath of the patient.

1 15. The apparatus of claim 13, wherein said plenum is at least twice the breadth as said
2 central passage.

1 16. Apparatus for monitoring carbon oxide of a patient's breath, comprising:
2 an oro-pharyngeal airway for insertion in the throat of a patient,
3 said airway having an elongated body with a proximal end for placement at the patient's
4 mouth and a distal end for placement through the patient's throat adjacent the larynx of the
5 patient,
6 said elongated body of said airway defining an open ended passage therethrough,
7 ribs extending externally along the length of said elongated body of the airway for
8 engagement with the facing surface of the throat of the patient for forming an external passage
9 about the airway so that the patient can breath about the airway,
10 a nipple at said proximal end of said elongated body of said airway and defining a
11 passage extending co-extensively from said open ended passage of said elongated body,
12 a T-connection formed at said nipple with a passage of the T- connection intersecting the
13 passage of said nipple and the open ended passage of said elongated body, said T-connection
14 forming a plenum of a breadth greater than the breadth of said airway for receiving the exhaled
15 breath of the patient, and
16 a breath monitor in communication with said T-connection for receiving the patient's
17 breath from said plenum and detecting the content of the patient's breath received from about the
18 larynx without having the breath passed in contact with the mouth of the patient.